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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/747,672

12/30/2003

Sang-Duk Lee

6192.0337.US

1563

32605 7590 03/28/2007
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EXAMINER

NGUYEN, LAUREN

ART UNIT

PAPER NUMBER

2871

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|-----------|---------------|
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3 MONTHS

03/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/747,672 | Applicant(s) LEE, SANG-DUK | |
| | Examiner Lauren Nguyen | Art Unit 2871 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-15, 17 and 18 is/are rejected.
- 7) ☒ Claim(s) 6 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 03/31/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 03/31/2005 was filed after the mailing date of the instant application on 12/30/2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

4. **Claim 10** is objected to because of the following informalities: **Claim 10** depends on itself. Appropriate correction is required.

As best understood, **claim 10** should depend on **claim 9**.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. **Claims 1-2** are rejected under 35 U.S.C. 102(b) as being anticipated by **Kim et al. (U.S. Patent Number 6,175,396)**.

7. With respect to **claim 1**, as shown in figures 1 and 13-14, **Kim et al.** discloses a flat panel display apparatus comprising:

- a flat panel display module (4, figure 1);
- a control PCB (4a) placed in one rear edge area of the flat panel display module and having a conductive grounding part (4d); and
- a grounding contact member (80, figure 13) including a rear contact part (82 and 83) contacting the grounding part (4d) of the control PCB, and a side contact part (81 and 85) bent from the rear contact part and contacting one edge of the flat panel display module, and grounding the control PCB.

8. With respect to **claim 2**, as applied to **claim 1** above and shown in figures 1 and 13-14, **Kim et al.** discloses the control PCB (4a, figure 1) has the length shorter than the width of the flat panel display module (4), and is placed in an approximate middle portion of an upper rear edge area of the flat panel display module.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 9-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al. (U.S. Patent Number 6,175,396)**.

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11. With respect to **claim 9**, as shown in figures 1 and 13-14, **Kim et al.** discloses an LCD comprising an LCD panel (4, figure 1) having a substrate on which a LCD driver IC (4b) is mounted, a backlight assembly (2 and 3) provided in the rear of the LCD panel and illuminating the LCD panel, and a chassis (1 and 5) combined to the backlight assembly so as to surround front edges of the LCD display panel and side parts of the backlight assembly, further comprising:

- a control PCB (4a) placed in one rear edge area of the flat panel display module and having a conductive grounding part (4d); and
- a grounding contact member (80, figure 13) including a rear contact part (82 and 83) contacting the grounding part (4d) of the control PCB, and a side contact part (81 and 85) bent from the rear contact part and contacting one edge of the flat panel display module, and grounding the control PCB.

Kim et al. discloses the limitations as shown in the rejection of **claim 9** above. **Kim et al.** does not disclose an FPC connecting the LCD driver IC with the control PCB.

However, **Kim et al.**, in at least column 6, lines 51-55; and column 7, lines 3-4, discloses a TAB substrate (4c) connecting the LCD driver IC (4b) with the control PCB (4a) and the TAB substrate is flexible.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the TAB substrate of **Kim et al.** because such modification would provide a flexibility to the TAB substrate when being bent, and therefore, all components will fit inside the body of the LCD devices (see at least column 7, lines 3-4).

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12. With respect to **claim 10**, as applied to **claim 9** above and shown in figures 1 and 13-14, **Kim et al.** discloses the control PCB (4a, figure 1) has the length shorter than the width of the backlight assembly (2 and 3), and is placed in an approximate middle portion of an upper rear edge area of the backlight assembly.

13. With respect to **claim 11**, as applied to **claim 10** above and shown in figures 1 and 13-14, **Kim et al.** discloses the FPC (4c, figure 1) has the length shorter than the width of the backlight assembly (2 and 3), and is connected to the control PCB (4a) in an approximate middle portion of an upper edge area of the LCD panel (4).

14. With respect to **claim 12**, as applied to **claim 11** above and shown in figures 1 and 13-14, **Kim et al.** discloses the backlight assembly (2 and 3) comprises a light guide plate (2) placed in the rear of the LCD panel, a lamp unit (see at least column 6, lines 29-30) illuminating the light guide plate, and a mold frame (1) placed in the rear of the light guide plate and combined with the chassis so as to accommodate and support the light guide plate and the lamp unit, and the control PCB (4a) is placed in one rear edge area of the mold frame.

15. **Claims 3, 5, 13, and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al. (U.S. Patent Number 6,175,396)** in view of **Kim (U.S. Patent Number 6,411,352)**.

16. With respect to **claim 3**, **Kim et al.** discloses the limitations as shown in the rejection of **claim 1** above. **Kim et al.** does not disclose a PCB cover placed behind the control PCB and combined to the flat panel display module so as to protect the control PCB.

However, **Kim**, in at least figures 3-6, discloses a PCB cover (24) placed behind the control PCB (22) and combined to the flat panel display module (see at least column 3, line 30) so as to protect the control PCB.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the flat panel display apparatus of **Kim et al.** with the teaching of **Kim** because such modification would reduce the time required for fixing the PCB to the frame and fix the PCB with stability (see at least column 3, lines 44-46; and column 4, lines 44-48).

17. With respect to **claim 5**, as applied to **claim 3** above and shown in figures 3-6, **Kim** discloses the PCB cover (24) includes a rear covering part (24A, figure 4) covering behind the control PCB (22), and a side combining part (24B) bent from the PCB covering part and combined to a side part of the flat panel display module.

18. With respect to **claim 13**, as applied to **claim 9** above and shown in figures 1 and 13-14, **Kim et al.** discloses the backlight assembly (2 and 3). **Kim et al.** does not disclose a PCB cover placed behind the control PCB to protect the control PCB.

However, **Kim**, in at least figures 3-6, discloses a PCB cover (24) placed behind the control PCB (22) and combined to the flat panel display module (see at least column 3, line 30) so as to protect the control PCB.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the flat panel display apparatus of **Kim et al.** with the teaching of **Kim** because such modification would reduce the time required for fixing the PCB to the frame and fix the PCB with stability (see at least column 3, lines 44-46; and column 4, lines 44-48).

19. With respect to **claim 15**, as applied to **claim 13** above and shown in figures 3-6, **Kim** discloses the PCB cover (24) includes a rear covering part (24A, figure 4) covering behind the control PCB (22), and a side combining part (24B) bent from the PCB covering part and combined to a side part of the chassis (20).

20. **Claims 4 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al. U.S. Patent Number 6,175,396** in view of **Official Notice**.

21. With respect to **claims 4 and 14**, **Kim et al.** discloses the limitations as shown in the rejection of **claims 1 and 9** above. **Kim et al.** does not disclose the grounding contact member is attached to the grounding part of the control PCB by an adhesive means.

The examiner takes Official Notice that adhesive means was well-known in the art at the time of the invention. It would have been obvious at the time of the invention to have an adhesive means in the device of **Kim et al.** since such modification would provide an easier technique to attach two parts together, and thus reduce the manufacturing process of LCD devices.

22. **Claims 7-8 and 17-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al. (U.S. Patent Number 6,175,396)** and **Kim (U.S. Patent Number 6,411,352)** in view of **Lee et al. (U.S. Patent Number 6,587,166)**.

23. With respect to **claims 7-8 and 17-18**, the combination of **Kim et al. / Kim** discloses the limitations as shown in the rejection of **claims 3 and 13** above. The combination of **Kim et al. / Kim** does not disclose the limitation of **claims 7 and 8**.

However, **Lee et al.**, in at least figures 1, 2, and 5, discloses the rear surface of the flat panel display module is formed a supporting rib (120, figure 2) protruding toward the control PCB (610, figure 5) and contact-supporting circumference of the control PCB at least partially so as to leave a space between the control PCB and the rear surface of the flat panel display module (**claims 7 and 17**), and an edge area of the control PCB is formed with a supporting hole (650), and the supporting rib is formed with a supporting boss (136) protruding toward the control PCB

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and inserted into the supporting hole of the control PCB (see at least column 7, lines 26-29)

(**claim 8 and 18**).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the rear surface and the PCB of the combination of **Kim et al. / Kim** with the teaching of **Lee et al.** because such modification would firmly affix the connection between the PCB and the rear case of LCD devices (see at least column 3, lines 24-25).

Allowable Subject Matter

24. **Claims 6 and 16** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

25. The following is a statement of reasons for the indication of allowable subject matter:

26. The specific limitations of "*the rear covering part of the PCB cover is formed with a grounding hole corresponding to the grounding part of the control PCB, and the side combining part of the PCB cover is formed with a cutting part through which the side contact part of the grounding contact member can contact the side part of the flat panel display module*" in the combination as claimed in claim 6 are not provided nor made obvious by the prior art of record.

Claim 6 and claim 16 would therefore be allowable if rewritten in independent form.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lee (U.S. Publication Number 2003/0098940) discloses a liquid crystal display device having an earth-fitting member.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lauren Nguyen whose telephone number is (571) 270-1428. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lauren Nguyen

March 7, 2007


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